In the Claims:

For the convenience of the Examiner, all pending claims of the present Application are shown below. This listing of claims replaces all prior versions and listings of claims in the application:

1. (Original) A method of electronically learning a signature, comprising the steps of:

sampling a signature and obtaining raw data representative thereof using a recursive sampling process;

translating the raw data into high dimension vectors; and

extracting, via an unsupervised neural network, high order principal components of the high dimension vectors by cumulative ortho-normalization.

2. (Original) The method of claim 1, further comprising integrating the high order principal components by generating a value r corresponding to a ratio of the number of vectors within an ellipsoid to the total number of vectors and a value s, the value s corresponding to the average of distances of all vectors within the ellipsoid.

3. (Original) The method of claim 2, further comprising:

calculating a value A = (average r - current signature sample r)^2/(variance of r) and B= (average s - current signature sample s)^2/(variance of s); and

multiplying the values A and B together.

4. (Original) The method of Claim 3, wherein multiplying the values A and B together comprises multiplying the values A and B together in a Pi neuron.

5. (Original) Software for electronically learning a signature, the software encoded in media and operable when executed to:

sample a signature and obtaining raw data representative thereof using a recursive sampling process;

translate the raw data into high dimension vectors; and

extract, via an unsupervised neural network, high order principal components of the high dimension vectors by cumulative ortho-normalization.

6. (Original) The software of claim 5, further operable to integrate the high order principal components by generating a value r corresponding to a ratio of the number of vectors within an ellipsoid to the total number of vectors and a value s, the value s corresponding to the average of distances of all vectors within the ellipsoid.

7. (Original) The software of claim 6, further operable to:

calculate a value A = (average r - current signature sample r)^2/(variance of r) and B= (average s - current signature sample s)^2/(variance of s); and

multiply the values A and B together.

8. (Original) The software of Claim 7, wherein the software operable to multiply the values A and B together comprises the software operable to multiply the values A and B together in a Pi neuron.

9. (Original) A computer for electronically learning a signature, comprising:

memory; and

one or more processors collectively operable to:

sample a signature and obtaining raw data representative thereof using a recursive sampling process;

translate the raw data into high dimension vectors; and

extract, via an unsupervised neural network, high order principal components of the high dimension vectors by cumulative ortho-normalization.

10. (Original) The computer of claim 9, the one or more processors further operable to integrate the high order principal components by generating a value r corresponding to a ratio of the number of vectors within an ellipsoid to the total number of vectors and a value s, the value s corresponding to the average of distances of all vectors within the ellipsoid.

11. (Original) The computer of claim 10, the one or more processors further operable to:

calculate a value A = (average r - current signature sample r)^2/(variance of r) and B= (average s - current signature sample s)^2/(variance of s); and

multiply the values A and B together.

12. (Original) The computer of Claim 11, wherein the one or more processors operable to multiply the values A and B together comprise the one or more processors operable to multiply the values A and B together in a Pi neuron.

13. (Original) A system for electronically learning a signature comprising:

means for sampling a signature and obtaining raw data representative thereof using a recursive sampling process;

means for translating the raw data into high dimension vectors; and

means for extracting, via an unsupervised neural network, high order principal components of the high dimension vectors by cumulative ortho-normalization.